APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,967	10/26/2001	Earl D. Cox	01-PAN-04	8713

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EXAMINER
HIRL, JOSEPH P

ART UNIT	PAPER NUMBER
2121	

DATE MAILED: 10/01/2004   10

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
	10/032,967	COX, EARL D.
	Examiner	Art Unit
	Joseph P. Hirl	2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>08 June 2004</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1,4-10,12-18 and 21-36</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1, 4-10, 12-18, 21-36</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to an AMENDMENT entered June 8, 2004,

for the patent application 10/032,967 filed on October 26, 2001.

2. The First Office Action of March 8, 2004 is fully incorporated into this Final Office

Action by reference.

Status of Claims

3. Claims 1, 4, 6, 9-10, 12, 14, 16-17, 21, 23, 29-31 and 35-36 are amended.

Claims 2-3, 11 and 19-20 are cancelled. Claims 1, 4-10, 12-18, 21-36 are pending in

this application.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Zager

et al (U.S. Pub 2002/0022952 referred to as **Zager**).

Claims 1, 12, 17

Zager anticipates instantiating, in a computer memory, the behavior expert, the

behavior expert having a plurality of memory locations and computer instructions

(**Zager**, p 0067; 0072; Examiner's Note (EN): model contains the behavior expert);

obtaining said operational information from at least one data provider connected to said

infrastructure component, said operational information providing values for a set of

variables that are used to define the performance of said infrastructure component

(**Zager**, p 0083; EN: p 13 applies); transforming zero or more states, according to a set

of metric rules, based on the values of said set of variables (**Zager**, p 0072; p 0092;

p0108; p0110; p0118; p 0199-204; EN: p 13 applies; a software agent is a behavior

expert; metric and quantitative are synonymous; state changes occur in the direct graph

of faults); generating zero or more events, indicating the performance of said

infrastructure component, according to a set of behavior rules, employed by said

behavior expert, based on said states transformed by said transforming (**Zager**, p 0072;

p 0092; p0108; p0110; p0118; p 0199-204; p 0151 EN: p 13 applies; a software agent is

a behavior expert; metric and quantitative are synonymous; state changes occur in the

direct graph of faults); reporting the events (**Zager**, p 0072); and performing adaptive

feedback control of the infrastructure component, based on the states, if the behavior

expert is coded for adaptive feedback control (**Zager**, p 0092; EN: while the MO's have

feedback, it is not necessary to cite such prior art since this limitation is a "non"

condition as explained below; see Fig. 1 for related ports; see p 0092 for model

consisting of many MO's related to different dependent behavior expert systems;

relationships that cross divisional lines establish the concept of "public" that is well established and inherent in the prior art of Zager).

Claims 4, 21, 29, 30

Zager anticipates each of said metric rules includes an if-then condition (**Zager**, p 0317); wherein said if-condition includes at least one of a quantitative condition expressed as at least one relation between a variable and its corresponding quantitative value (**Zager**, p 0196 – p 0199; EN: p 13 applies; to one of ordinary skill in the art, packet loss rate will be a quantitative condition expressed as packets input, packets output over time t); a qualitative condition expressed as at least one relation between a variable and its corresponding qualitative value (**Zager**, p 0196 – p 0199; EN: p 13 applies; to one of ordinary skill in the art, condition of managed resources such as network A terminated load to network B); and a combination of quantitative and qualitative condition which includes at least one quantitative condition and at least one qualitative condition (**Zager**, p 0196 – p 0199; EN: p 13 applies; agent infers the condition of managed resource by retrieving system management metrics from the control blocks of the relevant OS).

Claims 5, 22

Zager anticipates quantitative value includes at least one of a numerical value, a Boolean value, and a string value (**Zager**, p 0199; EN: "system management metrics").

Claims 6, 23

Zager anticipates qualitative value includes a specificity term represented by a fuzzy set (**Zager**, p 0297; EN: p 13 applies; cardinality relationships are fuzzy).

Claims 7, 12, 24

Zager anticipates declaring zero or more elements of said behavior expert as public elements so that said elements can be accessed by different behavior experts (**Zager**, p 0286; EN: p 20 applies; many-to-many); and specifying zero or more different behavior experts as the dependencies of said behavior expert so that the elements declared by said different behavior experts as public elements can be accessed by said behavior expert (**Zager**, p 0286; EN: p 13 applies; many-to-many).

Claims 8, 13, 25

Zager anticipates said elements include at least one of a state, an event, and a fuzzy set (**Zager**, p 0036).

Claims 9, 14, 26

Zager anticipates the step of the behavior expert reporting events includes forming a uniform event representation for said events, in accordance with a standard format (**Zager**, p 0033); and posting said uniform event representation of said events in an event pool (**Zager**, p 0047; EN: p 13 applies; a database is an event pool).

Claim 10

Zager anticipates at least one data provider includes at least one of a service, an operating system, an application, an external transaction, a network, and a additional behavior expert (**Zager**, p 0042; 0092; EN: model consists of MO's).

Claims 15, 27

Zager anticipates standard format includes a uniform data model (**Zager**, p 0034; EN: p 13 applies; a flexible model will uniformly represent the system).

Claims 16, 28

Zager anticipates event pool includes a blackboard (**Zager**, p 0031; EN: p 13

applies; to one of ordinary skill in the art, the blackboard concept is synonymous with

commonality to include "a solution").

Claim 18

Zager anticipates at least one data provider includes at least one of a service, an

operating system, an application, an external transaction, a network, and a behavior

expert (**Zager**, p 0042; EN: p 13 applies; EN: Fig. 1 represents an operating system, an

application, an external transaction, a network, and agent software providing data).

Claim 31

Zager anticipates a plurality of behavior experts wherein each behavior expert

includes an array of one or more internal states which are assigned values by said

behavior expert such that different internal states contain information collected at

different times (**Zager**, p 0035; EN: p 13 applies); and a plurality of bi-directional

linkages between said behavior expert systems wherein each behavior expert system

has access to the internal states of other behavior expert systems within the plurality,

forming a specific topology of linked behavior experts (**Zager**, p 0297).

Claim 32

Zager anticipates each behavior expert transforms its own internal states,

according to a set of metric rules, based on the internal states within said behavior

expert and one or more internal states of one or more other behavior experts within the

plurality of behavior experts (**Zager**, p 0151, 0152).

Claim 33

Zager anticipates each behavior expert generates events, according to behavior rules, based on the internal states within said behavior expert and one or more internal states of one or more other behavior experts within the plurality (**Zager**, p 0151, 0152).

Claim 34

Zager anticipates each behavior expert operates at an independent execution frequency (**Zager**, p 0150; EN: at their discretion is synonymous with independent execution frequency).

Claim 35

Zager anticipates the bi-directional linkages between the behavior experts are changed dynamically (**Zager**, p 0244; EN: the agents are dynamic, have bi-directional linkages and it follows that linkages are altered).

Claim 36

Zager anticipates the operation of the infrastructure component changes, select behavior experts within the plurality are dynamically instantiated or destroyed (**Zager**, p 0244).

Response to Arguments

6.   The objection to the specification is withdrawn.

7.   The claim objections are withdrawn.

8.   The rejection under 35 USC 101 is withdrawn.

9.   The rejection under 35 USC 112, first paragraph, is withdrawn.

10.   Applicant's arguments filed on June 8, 2004 related to Claims 1, 4-10, 12-18, 21-

36 have been fully considered but are not persuasive.

In reference to Applicant's argument:

In the Office Action dated March 8, 2004, the Examiner rejects claims 1-36 under 35 U.S.C. § 102(e) as
being anticipated by Zager. Applicant respectfully traverses the rejection and requests reconsideration.
Independent claim 1 is allowable over Zager in that the claim, as amended, recites "the behavior expert
performing adaptive feedback control of the infrastructure component, based on the states, if the behavior
expert is coded for adaptive feedback control." Nothing in Zager teaches or suggests at least this feature
of the claimed invention.

Examiner's response:

This is a Markush type claim (MPEP 20173.05(h)) and the alternative that has

been created relates to "the behavior expert performing adaptive feedback control of the

infrastructure component, based on states, ..." but only if the behavior expert is coded

for adaptive feedback control". If such coding is not done, this is a "non" condition and

in essence does not exist. Hence, the applicant has not changed the substance of

claim 1 and the original prior art applies.

In reference to Applicant's argument:

Applicant respectfully traverses the rejection of amended independent claim 12 and requests
reconsideration. Claim 12, which is made independent by this amendment, is allowable over Zager in that
the claim recites "an output port for exporting zero or more elements of said behavior expert system as
public elements so that said elements can be accessed by different behavior expert systems," and "an
input port for importing zero or more elements from different dependent behavior expert systems wherein
said zero or more elements are declared as public elements by said different behavior expert systems."
Nothing in Zager teaches or suggests at least this feature of the claimed invention. Specifically, the
Modified Objects taught in Zager communicate by means of "messages [that] MO's pass to one another
in their publisher-subscriber relationship."

Examiner's response:

As noted above, creating alternatives such as "exporting zero or more elements" is a Markush type claim (MPEP 20173.05(h)) wherein from the claim language quoted, the situation exists where an output port exports zero elements of said behavior expert system. This is again a "non" or quiescent condition and the prior art of Zager et al as noted in the First Office Action applies. Should there be a situation where the output port exports greater than zero elements, Zager full applies as specifically noted in the First Office Action. From Zager @ p 72, one has a model that simulates the evolution of faults and performance degradations based on inputs. From Zager @ p 92, managed objects exist within the model which are finite state machines which would act as public elements receiving information from the system. From Zager @ 118, the impact identifies the outcomes of applying a reasoning system to the known faults. Hence, the model or behavior expert system receives information on conditions which must be public to be accessed by multiple managed objects, and maintained public for processing. The concept of "public" is well known to those of skill in the art as merely identifying access to an "element" across boundaries where the boundaries maybe software programs or subprograms.

In reference to Applicant's argument:

Applicant respectfully traverses the rejection of amended independent claim 17 and requests reconsideration. Independent claim 17 is allowable over Zager in that the claim, as amended, recites "implementing an adaptive feedback control of the infrastructure component, based on said states, if the behavior expert is coded for adaptive feedback control."

Examiner's response:

See above response related to claim 1.

In reference to Applicant's argument:

Applicant respectfully traverses the rejection of amended independent claim 31 and requests reconsideration. Independent claim 31 is allowable over Zager in that the claim, as amended, recites that "each behavior expert system has access to the internal states of other behavior expert systems within the plurality." Nothing in the Zager reference teaches at least this feature of the claimed invention. Specifically, as noted in the response to the rejection of claim 12, the Modified Objects taught in Zager communicate by means of "messages [that] MO's pass to one another in their publisher-subscriber relationship." (Zager, P 152).

Examiner's response:

From Zager @ 92, "Managed objects are constructs of the model." "MO's are augmented finite state machines ..." From Zager @ 101, "A single pair of MO's may have multiple relations between them." MO's are behavior expert systems and within the concept of the model, have access to whatever each of them needs to include internal states of other MO's.

Examination Considerations

11.   The claims and only the claims form the metes and bounds of the invention. "Office personnel are to give the claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris,* 127 F.3d 1048, 1054-55, 44USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater,* 415 F.2d, 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969)" (MPEP p 20100-8, c 2, l 45-48; p 20100-9, c 1, l 1-4). The Examiner has full latitude to interpret each claim in the broadest reasonable sense. Examiner will reference prior art using terminology familiar to one of ordinary skill in the

art. Such an approach is broad in concept and can be either explicit or implicit in meaning.

12.   Examiner's Notes are provided to assist the applicant to better understand the nature of the prior art, application of such prior art and, as appropriate, to further indicate other prior art that maybe applied in other office actions. Such comments are entirely consistent with the intent and spirit of compact prosecution. However, and unless otherwise stated, the Examiner's Notes are not prior art but a link to prior art that one of ordinary skill in the art would find inherently appropriate.

13.   Examiner's Opinion: Paras 11. and 12. apply. The Examiner has full latitude to interpret each claim in the broadest reasonable sense.

Conclusion

14.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

15.   A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

16.   Claims 1, 4-10, 12-18 and 21-36 are rejected.

Correspondence Information

17.   Any inquiry concerning this information or related to the subject disclosure

should be directed to the Examiner, Joseph P. Hirl, whose telephone number is

(703) 305-1668. The Examiner can be reached on Monday – Thursday from

6:00 a.m. to 4:30 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the

Examiner's supervisor, Anthony Knight can be reached at (703) 308-3179.

Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks,

Washington, D. C. 20231;

or faxed to:

(703) 746-7239 (for formal communications intended for entry);

or faxed to:

(703) 746-7290 (for informal or draft communications with notation of

"Proposed" or "Draft" for the desk of the Examiner).

Note: During the last two weeks of October 2004, Art Unit 2121 will move to Carlyle, Randolph Building, 5th floor and my phone and fax number will change to: 571-272-3685 and 571-273-3685, respectively. Similarly, Anthony Knight's phone and fax numbers will change to: 571-272-3687 and 571-273-3687.

Joseph P. Hirl

September 28, 2004

Anthony Knight
Supervisory Patent Examiner
Group 3600